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EXAMINER

MARTINEZ, CARLOS A

ART UNIT PAPER NUMBER

2853

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	03/22/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/774,367	<b>Applicant(s)</b> OHKUBO, HIROKI	
	<b>Examiner</b> Carlos A. Martinez, Jr.	<b>Art Unit</b> 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8, 10-22, 24-31 and 33-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-22, 24-31 and 33-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Specification***

The correction made to the specification was received on 11/28/2006. It is noted that the correction to the specification was acceptable.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 22 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 22, the statutory category of the invention that is being claimed is indistinct because the preamble of the claims – which states “A computer program product for use with an optical writing system” – suggest to render the claims as directed towards an apparatus; however, as the claim then further continues, the phraseology utilized such as “by performing steps comprising ...” and the series of method steps recited in the respective body of the claim would suggest that applicant is seeking to render the claims as being directed towards a method claim, instead of providing further limitation to the stated apparatus of a computer program product.

Further, since claim 41 is dependent on claim 22, claim 41 is also rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

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2. Claims 40 and 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the claims 40 and 41, the expression "wherein the receiving receives" is unclear/indefinite to the Office. Therefore, as the claim language is unclear/indefinite to the Office, the claims will be rejected with their parent claims.

#### ***Claim Objections***

3. Claim 37 is objected to because of the following informalities: Claim 37 is improperly dependent on itself. Claim 37 will be examined (in this office action) as claiming dependency on claim 33. Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and JP2001091870.

- Nihei teaches an optical writing system (Fig. 21; and [0044]) that has at least two laser diodes ([0039] and [0176]); a polygonal mirror (element 204 and 307; and also [0171] and [0176]); a first correction mechanism configured to receive a first external parameter ([0167] and [0168]), scan data of two laser diodes by one scanning movement with said polygonal mirror ([0225]), and correct, based on the first external parameter ([0167] and [0168]), a dot forming position of a terminating edge in a main scanning direction by shifting arbitrarily a phase of a picture element clock ([0114] and [0038] – [0042]).
- Also, as per MPEP 2131.01, Takesue discloses a first correction mechanism that receives the first external parameter ([0178] and [0179]). Further, Nihei discloses a second correction mechanism to correct an amount of deviation in a data writing position along a vertical scanning direction ([0200], [0201], and [0181]; also P and  $P \cos \theta$  of Fig. 33A and Fig. 33B); however, Nihei fails to specifically disclose a correct an amount of deviation to be approximately one laser diode line width. Suzuki discloses a correct an amount of deviation to be approximately one laser diode line width (lines 5-30 of column 7). Also, Nihei fails to specifically disclose a second external parameter, and corrects based on the second external parameter. JP2001091870 discloses a second external parameter, and corrects based on the second external parameter (abstract and [0053]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei, with a correct an amount of deviation to be approximately one laser diode line width, and a

second external parameter, and corrects based on the second external parameter, as taught by Takesue, Suzuki, and JP2001091870, for the purpose of providing deviation correction as known to those skilled in the art.

With respect to claims 19, *the method of correcting data written by an optical writing system is rejected based on the functions provided by the apparatus.*

5. Claims 1-3, 5, 8, 19, 38, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782).

- Nihei teaches an optical writing system (Fig. 21; and [0044]) that has at least two laser diodes ([0039] and [0176]); a polygonal mirror (element 204 and 307; and also [0171] and [0176]); a first correction mechanism configured to receive a first external parameter ([0167] and [0168]), scan data of two laser diodes by one scanning movement with said polygonal mirror ([0225]), and correct, based on the first external parameter ([0167] and [0168]), a dot forming position of a terminating edge in a main scanning direction by shifting arbitrarily a phase of a picture element clock ([0114] and [0038] – [0042]).
- Also, as per MPEP 2131.01, Takesue discloses a first correction mechanism that receives the first external parameter ([0178] and [0179]). Further, Nihei discloses a second correction mechanism to correct an amount of deviation in a data writing position along a vertical scanning direction ([0200], [0201], and [0181]; also P and

Pcos  $\theta$  of Fig. 33A and Fig. 33B); however, Nihei fails to specifically disclose a correct an amount of deviation to be approximately one laser diode line width.

Suzuki discloses a correct an amount of deviation to be approximately one laser diode line width (lines 5-30 of column 7). Also, Nihei fails to specifically disclose a second external parameter, and corrects based on the second external parameter.

Amada discloses a second external parameter, and corrects based on the second external parameter ([0083]).

- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei, with a correct an amount of deviation to be approximately one laser diode line width, and a second external parameter, and corrects based on the second external parameter, as taught by Takesue, Suzuki, and Amada, for the purpose of providing deviation correction as known to those skilled in the art.

With respect to claims 2 and 3,

- Nihei (in view of Takesue, Suzuki) disclose a second correction mechanism; however, Nihei (in view of Takesue, Suzuki) fails to specifically disclose where the second correction mechanism is configured to start and stop correction of the amount of deviation based on the second external parameter.
- However, Amada discloses where the second correction mechanism is configured to start and stop correction of the amount of deviation based on the second external parameter ([0083]). It should be noted that the mention of manual operation, using

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an external control, would obviously encompass the starting and stopping of a second correction mechanism.

- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki), where the second correction mechanism is configured to start and stop correction of the amount of deviation based on the second external parameter, as taught by Amada, for the purpose of providing correction to an optical system as needed and when it is needed by an operator or user.

With respect to claim 5,

- Nihei (in view of Suzuki) discloses a first correction mechanism.
- However, Nihei (in view of Suzuki) fails to specifically disclose where the first correction mechanism is configured to start to correct the dot forming position based on the first external parameter.
- Takesue discloses where the first correction mechanism is configured to start to correct the dot forming position based on the first external parameter ([0176]-[0179], and [0182]-[0184]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Suzuki), where the first correction mechanism is configured to start to correct the dot forming position based on the first external parameter, as taught by Takesue, for the purpose of providing correction when needed in the main-scanning direction.



With respect to claim 8,

- Nihei (in view of Suzuki) discloses a first correction mechanism.
- However, Nihei (in view of Suzuki) fails to specifically disclose where the first correction mechanism is configured to stop correcting based on the first external parameter.
- Takesue discloses where the first correction mechanism is configured to stop correcting based on the first external parameter ([0176]-[0179], and [0182]-[0184]; note: that when the shifting step value is 0 then no shift correction occurs; hence the correction mechanism is stopped or not used at the noted value).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Suzuki), where the first correction mechanism is configured to stop correcting based on the first external parameter, as taught by Takesue, for the purpose of providing correction when needed in the main-scanning direction.

With respect to claims 19 and 40, *the method of correcting data written by an optical writing system is rejected based on the functions provided by the apparatus.*

With respect to claim 38,

- Nihei (in view of Takesue, Suzuki) disclose a mechanism exterior to said optical system writing system, and where the first external parameter is received from an

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exterior mechanism; however, Nihei (in view of Takesue, Suzuki) fails to specifically disclose where the second external parameter could be received from an exterior mechanism.

- Amada discloses where the second external parameter could be received from an exterior mechanism ([0083]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Suzuki), where the second external parameter could be received from an exterior mechanism, as taught by Amada, for the purpose providing parameters from an external mechanism as known to those skilled in the art.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782), as applied to claim 1 above, and further in view of Amada (US20020149666).

- Nihei (in view of Takesue, Suzuki, Amada) discloses where the first correction mechanism and the second correction mechanism are configured to be controlled; however, (in view of Takesue, Suzuki) fails to specifically disclose a separate controlling of the first and second correction mechanism.
- However, Amada (US20020149666) discloses where a separate controlling of the first and second correction mechanism ([0024] and [0198]).

- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by (in view of Takesue, Suzuki), for a separate controlling of the first and second correction mechanism, as taught by Amada (US20020149666), for the purpose of providing correction where needed towards only the mechanism which requires adjustment rather than wasting resources on also making adjustments on a mechanism not requiring correction.

Also, claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782), as applied to claim 1 above, and further in view of Tashiro (US5565964).

- Nihei (in view of Takesue, Suzuki, Amada) discloses where the first correction mechanism and the second correction mechanism are configured to be controlled; however, (in view of Takesue, Suzuki) fails to specifically disclose a separate controlling of the first and second correction mechanism.
- However, Tashiro discloses where a separate controlling of the first and second correction mechanism (column 13, lines 25-37).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by (in view of Takesue, Suzuki), for a separate controlling of the first and second correction mechanism, as taught by Tashiro, for the purpose of providing separate controlling as known to those skilled in the art.

7. Claims 6 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782), as applied to claim 1 above, and further in view of Maeda (US20010028387).

- Nihei (in view of Takesue, Suzuki, and Amada) discloses at least two laser diodes along with a picture element clock.
- However, Nihei (in view of Takesue, Suzuki, and Amada) fails to specifically disclose where the first correction mechanism is further configured to arbitrarily shift the phase of the picture element clock based on a scaling error factor.
- Maeda discloses where the first correction mechanism is further configured to arbitrarily shift the phase of the picture element clock based on a scaling error factor ([0088], [0172], and [0178]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, and Amada), where the first correction mechanism is further configured to arbitrarily shift the phase of the picture element clock based on a scaling error factor, as taught by Maeda, for the purpose of utilizing a known way of operating a picture element clock.

With respect to claim 21, *the method of correcting data written by an optical writing system is rejected based on the functions provided by the apparatus.*

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8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), Amada (US20030025782), and Maeda (US20010028387), as applied to claim 6 above, and further in view of Shimmura (US20040184859).

- Nihei (in view of Takesue, Suzuki, Amada, and Maeda) discloses the use of a scaling error factor.
- However, Nihei (in view of Takesue, Suzuki, Amada, and Maeda) fails to specifically disclose wherein the first external parameter includes the scaling error factor.
- Shimmura teaches wherein the first external parameter includes the scaling error factor (refer to [0098] and [0099]), where the selective inputting of the scaling error factor corresponds to halftone portions as noted in applicant's disclosure (refer to PGPUBS # 2004/0155953, paragraphs [0172] - [0175]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Maeda), wherein the first external parameter includes the scaling error factor, as taught by Shimmura, for the purpose of providing the ability to control image properties by using an external operation mechanism – a commonly known form of providing/inputting control properties.

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9. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782), as applied to claim 1 above, and further in view of Hirota (US20030142865).

- Nihei (in view of Takesue, Suzuki, and Amada) discloses a second correction mechanism configured to receive a second external parameter.
- However, Nihei (in view of Takesue, Suzuki, and Amada) fails to specifically disclose where an external parameter may include information indicating that a type of a document is one of a character document, a photography document, a mixed character and photography document, and a non-character and non-photography document.
- Hirota discloses where an external parameter may include information indicating that a type of a document is one of a character document, a photography document, a mixed character and photography document, and a non-character and non-photography document ([0126]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, and Amada), where an external parameter may include information indicating that a type of a document is one of a character document, a photography document, a mixed character and photography document, and a non-character and non-photography document, as taught by Hirota, for the purpose of providing operational modes as known to those skilled in the arts.

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10. Claims 11-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), Amada (US20030025782), and Hirota (US20030142865), as applied to claim 10 above, and further in view of Morikawa (US20020126152).

- Nihei (in view of Takesue, Suzuki, Amada, and Hirota) discloses a second correction mechanism is further configured to enable correction of an amount of deviation in a data writing position, as well as a character document.
- However, Nihei (in view of Takesue, Suzuki, Amada, and Hirota) fails to specifically disclose a first difficulty level when the information indicates that the type of document is a character document.
- Morikawa discloses a first difficulty level when the information indicates that the type of document is a character document ([0039] and [0040]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Hirota), with a first difficulty level when the information indicates that the type of document is a character document, as taught by Morikawa, for the purpose of providing operational modes as known to those skilled in the arts.

With respect to claim 12,

- Nihei (in view of Takesue, Suzuki, Amada, and Hirota) discloses wherein said second correction mechanism is further configured to be placed in a state including

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one of disable/off/stop, and enabled/on/start to correct an amount of deviation in data writing position (i.e. [0083] of Amada), as well as a photography document.

- However, Nihei (in view of Takesue, Suzuki, Amada, and Hirota) fails to specifically disclose a second difficulty level when the information indicates that the type of document is a photography document.
- Morikawa discloses a second difficulty level when the information indicates that the type of document is a photography document ([0039] and [0040]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Hirota), with a second difficulty level when the information indicates that the type of document is a photography document, as taught by Morikawa, for the purpose of providing operational modes as known to those skilled in the arts.

With respect to claim 13,

- Nihei (in view of Takesue, Suzuki, Amada, and Hirota) discloses wherein said second correction mechanism is further configured to be placed in a state including one of disable, and enabled to correct an amount of deviation in data writing position (i.e. [0083] of Amada), as well as a mixed character and photography document.
- However, Nihei (in view of Takesue, Suzuki, Amada, and Hirota) fails to specifically disclose a second difficulty level when the information indicates that the type of document is a mixed character and photography document.



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- Morikawa discloses a second difficulty level when the information indicates that the type of document is a mixed character and photography document ([0039] and [0040]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Hirota), with a second difficulty level when the information indicates that the type of document is a mixed character and photography document, as taught by Morikawa, for the purpose of providing operational modes as known to those skilled in the arts.

With respect to claim 14,

- Nihei (in view of Takesue, Suzuki, Amada, and Hirota) discloses wherein said second correction mechanism is further configured to be placed in a state including one of disable, and enabled to correct an amount of deviation in data writing position (i.e. [0083] of Amada), as well as a non-character and non-photography document.
- However, Nihei (in view of Takesue, Suzuki, Amada, and Hirota) fails to specifically disclose a second difficulty level when the information indicates that the type of document is a non-character and non-photography document.
- Morikawa discloses a second difficulty level when the information indicates that the type of document is a non-character and non-photography document ([0039] and [0040]).

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- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Hirota), with a second difficulty level when the information indicates that the type of document is a non-character and non-photography document, as taught by Morikawa, for the purpose of providing operational modes as known to those skilled in the arts.

With respect to claim 20, *the method of correcting data written by an optical writing system is rejected based on the functions provided by the apparatus.*

11. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and JP2001091870.

- Nihei teaches an optical writing system (Fig. 21; and [0044]) that has at least two laser diodes ([0039] and [0176]); a polygonal mirror (element 204 and 307; and also [0171] and [0176]); a first correction mechanism configured to receive a first external parameter ([0167] and [0168]), scan data of two laser diodes by one scanning movement with said polygonal mirror ([0225]), and correct, based on the first external parameter ([0167] and [0168]), a dot forming position of a terminating edge in a main scanning direction by shifting arbitrarily a phase of a picture element clock ([0114] and [0038] – [0042]), and an image forming mechanism configured to

form visible images on a sheet by visibly rendering electrostatic latent images written by said optical writing system ([0188] and [0189]).

- Also, as per MPEP 2131.01, Takesue discloses a first correction mechanism that receives the first external parameter ([0178] and [0179]). Further, Nihei discloses a second correction mechanism to correct an amount of deviation in a data writing position along a vertical scanning direction ([0200], [0201], and [0181]; also  $P$  and  $P \cos \theta$  of Fig. 33A and Fig. 33B); however, Nihei fails to specifically disclose a correct an amount of deviation to be approximately one laser diode line width. Suzuki discloses a correct an amount of deviation to be approximately one laser diode line width (lines 5-30 of column 7). Also, Nihei fails to specifically disclose a second external parameter, and corrects based on the second external parameter. JP2001091870 discloses a second external parameter, and corrects based on the second external parameter (abstract and [0053]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei, with a correct an amount of deviation to be approximately one laser diode line width, and a second external parameter, and corrects based on the second external parameter, as taught by Takesue, Suzuki, and JP2001091870, for the purpose of providing deviation correction as known to those skilled in the art.

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Also, claims 15, 17, 18, 19, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782).

- Nihei teaches an optical writing system (Fig. 21; and [0044]) that has at least two laser diodes ([0039] and [0176]); a polygonal mirror (element 204 and 307; and also [0171] and [0176]); a first correction mechanism configured to receive a first external parameter ([0167] and [0168]), scan data of two laser diodes by one scanning movement with said polygonal mirror ([0225]), and correct, based on the first external parameter ([0167] and [0168]), a dot forming position of a terminating edge in a main scanning direction by shifting arbitrarily a phase of a picture element clock ([0114] and [0038] – [0042]), and an image forming mechanism configured to form visible images on a sheet by visibly rendering electrostatic latent images written by said optical writing system ([0188] and [0189]).
- Also, as per MPEP 2131.01, Takesue discloses a first correction mechanism that receives the first external parameter ([0178] and [0179]). Further, Nihei discloses a second correction mechanism to correct an amount of deviation in a data writing position along a vertical scanning direction ([0200], [0201], and [0181]; also  $P$  and  $P \cos \theta$  of Fig. 33A and Fig. 33B); however, Nihei fails to specifically disclose a correct an amount of deviation to be approximately one laser diode line width. Suzuki discloses a correct an amount of deviation to be approximately one laser diode line width (lines 5-30 of column 7). Also, Nihei fails to specifically disclose a second external parameter, and corrects based on the second external parameter.

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Amada discloses a second external parameter, and corrects based on the second external parameter ([0083]).

- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei, with a correct an amount of deviation to be approximately one laser diode line width, and a second external parameter, and corrects based on the second external parameter, as taught by Takesue, Suzuki, and Amada, for the purpose of providing deviation correction as known to those skilled in the art.

With respect to claims 17 and 18,

- Nihei (in view of Takesue, Suzuki) disclose a second correction mechanism; however, Nihei (in view of Takesue, Suzuki) fails to specifically disclose where the second correction mechanism is configured to start and stop correction of the amount of deviation based on the second external parameter.
- However, Amada discloses where the second correction mechanism is configured to start and stop correction of the amount of deviation based on the second external parameter ([0083]). It should be noted that the mention of manual operation, using an external control, would obviously encompass the starting and stopping of a second correction mechanism.
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki), where the second correction mechanism is configured to start

and stop correction of the amount of deviation based on the second external parameter, as taught by Amada, for the purpose of providing correction to an optical system as needed and when it is needed by an operator or user.

With respect to claim 19, *the method of correcting data written by an optical writing system is rejected based on the functions provided by the apparatus.*

With respect to claim 39,

- Nihei (in view of Takesue, Suzuki) disclose a mechanism exterior to said optical system writing system, and where the first external parameter is received from an exterior mechanism; however, Nihei (in view of Takesue, Suzuki) fails to specifically disclose where the second external parameter could be received from an exterior mechanism.
- Amada discloses where the second external parameter could be received from an exterior mechanism ([0083]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Suzuki), where the second external parameter could be received from an exterior mechanism, as taught by Amada, for the purpose providing parameters from an external mechanism as known to those skilled in the art.

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12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782), as applied to claim 15 above, and further in view of Morikawa (US20020126152).

- Nihei (in view of Takesue, Suzuki, and Amada) discloses an operation input mechanism (i.e. [0083] of Amada), also where the first and second external parameters are configured to instruct the first and second correction mechanism, and where the first correction mechanism and the second correction mechanism are configured to be operated individually or in combination; however, (in view of Takesue, Suzuki, and Amada) fails to specifically disclose where an operation input mechanism is configured to selectively input the first and second external parameters.
- However, Morikawa discloses where an operation input mechanism is configured to selectively input the first and second external parameters ([0039] and [0040]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by (in view of Takesue, Suzuki, and Amada), where an operation input mechanism is configured to selectively input the first and second external parameters, as taught by Morikawa, for the purpose of providing an operation input mechanism as known to those skilled in the art.

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13. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and JP2001091870.

- Nihei teaches an optical writing system (Fig. 21; and [0044]) that has at least two laser diodes ([0039] and [0176]); a polygonal mirror (element 204 and 307; and also [0171] and [0176]); a first correction mechanism including means for receiving a first external parameter ([0167] and [0168]), means for scanning data of said two laser diodes with said polygonal mirror ([0225]), and means for correct, based on the first external parameter ([0167] and [0168]), a dot forming position of a terminating edge in a main scanning direction, including means for shifting arbitrarily a phase of a picture element clock ([0114] and [0038] – [0042]).
- Also, as per MPEP 2131.01, Takesue discloses a first correction mechanism that receives the first external parameter ([0178] and [0179]). Further, Nihei discloses a second correction mechanism to correct an amount of deviation in a data writing position along a vertical scanning direction ([0200], [0201], and [0181]; also P and  $P \cos \theta$  of Fig. 33A and Fig. 33B); however, Nihei fails to specifically disclose a correct an amount of deviation to be approximately one laser diode line width. Suzuki discloses a correct an amount of deviation to be approximately one laser diode line width (lines 5-30 of column 7). Also, Nihei fails to specifically disclose a second external parameter, and corrects based on the second external parameter. JP2001091870 discloses a second external parameter, and corrects based on the second external parameter (abstract and [0053]).



- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei, with a correct an amount of deviation to be approximately one laser diode line width, and a second external parameter, and corrects based on the second external parameter, as taught by Takesue, Suzuki, and JP2001091870, for the purpose of providing deviation correction as known to those skilled in the art.

Also, claims 24-26, 28, 31, and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782).

- Nihei teaches an optical writing system (Fig. 21; and [0044]) that has at least two laser diodes ([0039] and [0176]); a polygonal mirror (element 204 and 307; and also [0171] and [0176]); a first correction mechanism including means for receiving a first external parameter ([0167] and [0168]), means for scanning data of said two laser diodes with said polygonal mirror ([0225]), and means for correct, based on the first external parameter ([0167] and [0168]), a dot forming position of a terminating edge in a main scanning direction, including means for shifting arbitrarily a phase of a picture element clock ([0114] and [0038] – [0042]).
- Also, as per MPEP 2131.01, Takesue discloses a first correction mechanism that receives the first external parameter ([0178] and [0179]). Further, Nihei discloses a second correction mechanism to correct an amount of deviation in a data writing position along a vertical scanning direction ([0200], [0201], and [0181]; also P and

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Pcos  $\theta$  of Fig. 33A and Fig. 33B); however, Nihei fails to specifically disclose a correct an amount of deviation to be approximately one laser diode line width.

Suzuki discloses a correct an amount of deviation to be approximately one laser diode line width (lines 5-30 of column 7). Also, Nihei fails to specifically disclose a second external parameter, and corrects based on the second external parameter.

Amada discloses a second external parameter, and corrects based on the second external parameter ([0083]).

- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei, with a correct an amount of deviation to be approximately one laser diode line width, and a second external parameter, and corrects based on the second external parameter, as taught by Takesue, Suzuki, and Amada, for the purpose of providing deviation correction as known to those skilled in the art.

With respect to claims 25 and 26,

- Nihei (in view of Takesue, Suzuki) disclose a second correction mechanism; however, Nihei (in view of Takesue, Suzuki) fails to specifically disclose where the second correction mechanism includes means for the start and stop in correction of the amount of deviation based on the second external parameter.
- However, Amada discloses where the second correction mechanism includes means for the start and stop in correction of the amount of deviation based on the second external parameter ([0083]). It should be noted that the mention of manual

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operation, using an external control, would obviously encompass the starting and stopping of a second correction mechanism.

- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki), where the second correction mechanism includes means for the start and stop in correction of the amount of deviation based on the second external parameter, as taught by Amada, for the purpose of providing correction to an optical system as needed and when it is needed by an operator or user.

With respect to claim 28,

- Nihei (in view of Suzuki) discloses a first correction mechanism.
- However, Nihei (in view of Suzuki) fails to specifically disclose where the first correction mechanism includes means for the start in correction of the dot forming position based on the first external parameter.
- Takesue discloses where the first correction mechanism is configured to start to correct the dot forming position based on the first external parameter ([0176]-[0179], and [0182]-[0184]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Suzuki), where the first correction mechanism is configured to start to correct the dot forming position based on the first external parameter, as taught by Takesue, for the purpose of providing correction when needed in the main-scanning direction.

With respect to claim 31,

- Nihei (in view of Suzuki) discloses a first correction mechanism.
- However, Nihei (in view of Suzuki) fails to specifically disclose where the first correction mechanism is configured to stop correcting based on the first external parameter.
- Takesue discloses where the first correction mechanism is configured to stop correcting based on the first external parameter ([0176]-[0179], and [0182]-[0184]; note: that when the shifting step value is 0 then no shift correction occurs; hence the correction mechanism is stopped or not used at the noted value).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Suzuki), where the first correction mechanism is configured to stop correcting based on the first external parameter, as taught by Takesue, for the purpose of providing correction when needed in the main-scanning direction.

With respect to claim 42,

- Nihei (in view of Takesue, Suzuki) disclose a mechanism exterior to said optical system writing system, and where the first external parameter is received from an exterior mechanism; however, Nihei (in view of Takesue, Suzuki) fails to specifically disclose where the second external parameter could be received from an exterior mechanism.

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- Amada discloses where the second external parameter could be received from an exterior mechanism ([0083]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Suzuki), where the second external parameter could be received from an exterior mechanism, as taught by Amada, for the purpose providing parameters from an external mechanism as known to those skilled in the art.

14. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782), as applied to claim 24 above, and further in view of Amada (US20020149666).

- Nihei (in view of Takesue, Suzuki, Amada) discloses where the first correction mechanism and the second correction mechanism are configured to be controlled; however, (in view of Takesue, Suzuki) fails to specifically disclose a separate controlling of the first and second correction mechanism.
- However, Amada (US20020149666) discloses where a separate controlling of the first and second correction mechanism ([0024] and [0198]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by (in view of Takesue, Suzuki); for a separate controlling of the first and second correction mechanism, as taught by Amada (US20020149666), for the purpose of providing

correction where needed towards only the mechanism which requires adjustment rather than wasting resources on also making adjustments on a mechanism not requiring correction.

Also, claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782), as applied to claim 24 above, and further in view of Tashiro (US5565964).

- Nihei (in view of Takesue, Suzuki, Amada) discloses where the first correction mechanism and the second correction mechanism are configured to be controlled; however, (in view of Takesue, Suzuki) fails to specifically disclose a separate controlling of the first and second correction mechanism.
- However, Tashiro discloses where a separate controlling of the first and second correction mechanism (column 13, lines 25-37).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by (in view of Takesue, Suzuki), for a separate controlling of the first and second correction mechanism, as taught by Tashiro, for the purpose of providing separate controlling as known to those skilled in the art.

15. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada

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(US20030025782), as applied to claim 24 above, and further in view of Maeda (US20010028387).

- Nihei (in view of Takesue, Suzuki, and Amada) discloses at least two laser diodes along with a picture element clock.
- However, Nihei (in view of Takesue, Suzuki, and Amada) fails to specifically disclose where the first correction mechanism is further configured to arbitrarily shift the phase of the picture element clock based on a scaling error factor.
- Maeda discloses where the first correction mechanism is further configured to arbitrarily shift the phase of the picture element clock based on a scaling error factor ([0088], [0172], and [0178]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, and Amada), where the first correction mechanism is further configured to arbitrarily shift the phase of the picture element clock based on a scaling error factor, as taught by Maeda, for the purpose of utilizing a known way of operating a picture element clock.

16. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), Amada (US20030025782), and Maeda (US20010028387), as applied to claim 29 above, and further in view of Shimmura (US20040184859).

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- Nihei (in view of Takesue, Suzuki, Amada, and Maeda) discloses the use of a scaling error factor.
- However, Nihei (in view of Takesue, Suzuki, Amada, and Maeda) fails to specifically disclose wherein the first external parameter includes the scaling error factor.
- Shimmura teaches wherein the first external parameter includes the scaling error factor (refer to [0098] and [0099]), where the selective inputting of the scaling error factor corresponds to halftone portions as noted in applicant's disclosure (refer to PGPUBS # 2004/0155953, paragraphs [0172] - [0175]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Maeda), wherein the first external parameter includes the scaling error factor, as taught by Shimmura, for the purpose of providing the ability to control image properties by using an external operation mechanism – a commonly known form of providing/inputting control properties.

17. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), and Amada (US20030025782), as applied to claim 24 above, and further in view of Hirota (US20030142865).

- Nihei (in view of Takesue, Suzuki, and Amada) discloses a second correction mechanism configured to receive a second external parameter.



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- However, Nihei (in view of Takesue, Suzuki, and Amada) fails to specifically disclose where an external parameter may include information indicating that a type of a document is one of a character document, a photography document, a mixed character and photography document, and a non-character and non-photography document.
- Hirota discloses where an external parameter may include information indicating that a type of a document is one of a character document, a photography document, a mixed character and photography document, and a non-character and non-photography document ([0126]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, and Amada), where an external parameter may include information indicating that a type of a document is one of a character document, a photography document, a mixed character and photography document, and a non-character and non-photography document, as taught by Hirota, for the purpose of providing operational modes as known to those skilled in the arts.

18. Claims 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nihei (US20030025785) in view of Takesue (US20020063770), Suzuki (US6281922), Amada (US20030025782), and Hirota (US20030142865), as applied to claim 33 above, and further in view of Morikawa (US20020126152).

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- Nihei (in view of Takesue, Suzuki, Amada, and Hirota) discloses a second correction mechanism is further configured to enable correction of an amount of deviation in a data writing position, as well as a character document.
- However, Nihei (in view of Takesue, Suzuki, Amada, and Hirota) fails to specifically disclose a first difficulty level when the information indicates that the type of document is a character document.
- Morikawa discloses a first difficulty level when the information indicates that the type of document is a character document ([0039] and [0040]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Hirota), with a first difficulty level when the information indicates that the type of document is a character document, as taught by Morikawa, for the purpose of providing operational modes as known to those skilled in the arts.

With respect to claim 35,

- Nihei (in view of Takesue, Suzuki, Amada, and Hirota) discloses wherein said second correction mechanism is further configured to be placed in a state including one of disable/off/stop, and enabled/on/start to correct an amount of deviation in data writing position (i.e. [0083] of Amada), as well as a photography document.

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- However, Nihei (in view of Takesue, Suzuki, Amada, and Hirota) fails to specifically disclose a second difficulty level when the information indicates that the type of document is a photography document.
- Morikawa discloses a second difficulty level when the information indicates that the type of document is a photography document ([0039] and [0040]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Hirota), with a second difficulty level when the information indicates that the type of document is a photography document, as taught by Morikawa, for the purpose of providing operational modes as known to those skilled in the arts.

With respect to claim 36,

- Nihei (in view of Takesue, Suzuki, Amada, and Hirota) discloses wherein said second correction mechanism is further configured to be placed in a state including one of disable, and enabled to correct an amount of deviation in data writing position (i.e. [0083] of Amada), as well as a mixed character and photography document.
- However, Nihei (in view of Takesue, Suzuki, Amada, and Hirota) fails to specifically disclose a second difficulty level when the information indicates that the type of document is a mixed character and photography document.

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- Morikawa discloses a second difficulty level when the information indicates that the type of document is a mixed character and photography document ([0039] and [0040]).
- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Hirota), with a second difficulty level when the information indicates that the type of document is a mixed character and photography document, as taught by Morikawa, for the purpose of providing operational modes as known to those skilled in the arts.

With respect to claim 37,

- Nihei (in view of Takesue, Suzuki, Amada, and Hirota) discloses wherein said second correction mechanism is further configured to be placed in a state including one of disable, and enabled to correct an amount of deviation in data writing position (i.e. [0083] of Amada), as well as a non-character and non-photography document.
- However, Nihei (in view of Takesue, Suzuki, Amada, and Hirota) fails to specifically disclose a second difficulty level when the information indicates that the type of document is a non-character and non-photography document.
- Morikawa discloses a second difficulty level when the information indicates that the type of document is a non-character and non-photography document ([0039] and [0040]).

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- Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify an optical writing system, as taught by Nihei (in view of Takesue, Suzuki, Amada, and Hirota), with a second difficulty level when the information indicates that the type of document is a non-character and non-photography document, as taught by Morikawa, for the purpose of providing operational modes as known to those skilled in the arts.

### *Response to Arguments*

19. Applicant's arguments with respect to claims 1-8, 10-22, 24-31, and 33-42 have been considered but are moot in view of the new ground(s) of rejection necessitated by applicant's amendment. Furthermore, the indicated allowability (in the office action dated 06/29/2006) of claim 20 is withdrawn because of applicant's amendments and newly discovered prior art.

20. With respect to applicant's argument regarding the Nihei reference (US20030025785), the Office still deems the reference appropriate for the purpose of establishing known limitations of an optical writing system. Thus, it is the stand of the Office that Nihei does indeed provide teaching applicable towards applicants stated claims and one would be motivated to refer to Nihei for reference with respect to an optical writing system (Fig. 21; and [0044]).

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos A. Martinez whose telephone number is (571)272-8349. The examiner can normally be reached on 8:30 am - 5:00 pm (M-F).


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D. MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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03/13/2007



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